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FOREST PEST MANAGEMENT

Technology Update

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Southern Pine Beetle Fact Sheet Number 17

CHEMICAL CONTROL[1]

Insecticides effectively control the southern pine beetle (SPB) in individual trees or small groups of trees. Registered insecticides are available for preventing attacks on green trees and for killing beetles in trees that have been attacked.[2] Although chemical control is costly and subject to environmental constraints it may be the best alternative in urban forests or high-value recreational areas, and even in limited areas of commercial forests when other methods cannot be used.

Preventive Application

The landowner may wish to protect selected high-value trees from SPB attack by making a preventive application. Preventive sprays should be applied to either the entire bole or, preferably, to only the upper half of the tree stem. A Study by Berisford et al (1982), found that thorough treatment of the upper half of the bole was as effective at preventing successful SPB attack as was treating the whole bole while using about 30 percent less insecticide. Of course, using less insecticide reduces costs as well as adverse impacts on non-target areas (figure 1). For short trees, hydraulic sprayers may be appropriate. Treatment for taller trees usually requires special equipment.

[1]See Southern Pine Beetle Fact Sheet No. 3, "Setting Control Priorities for the Southern Pine Beetle."

[2]See Southern Pine Beetle fact Sheet No. 5, "Insecticides for the Southern Pine Beetle."

Remedial Application

The following procedures are recommended whenever insecticides are used to control beetles in trees that have already been attacked.

1. Identify and mark all infested trees. Do not mark a bufffer strip or vacated trees.

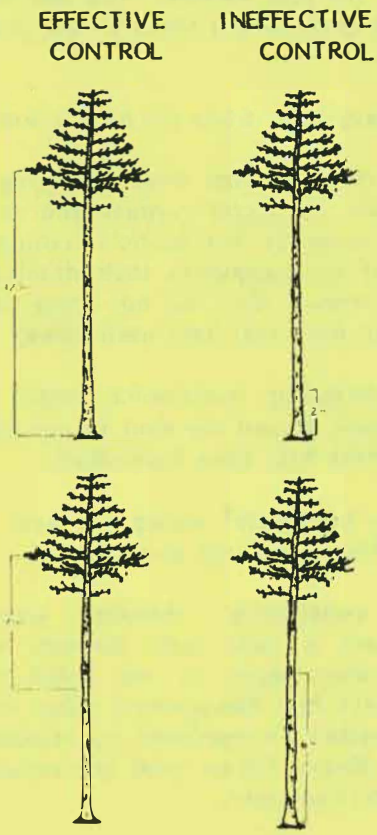

Figure 1.—Treatments which result in either effective or ineffective preventive control of the southern pine beetle.

2. Trees containing advanced broods (late instar larvae, pupae, adults) should be treated first.

3. Infested trees should be felled, limbed, and cut into workable lengths. In large spots, infested trees should be cut into workable lengths and sprayed as they are felled to ensure complete treatment.

4. Use low-pressure sprayers -- hydraulic for large, accessible spots, garden or backpack for small or inaccessible spots.

5. Spray the entire infested bark surface. To accomplish this, adjust nozzles so the spray stream is about equal to the tree diameter when the nozzle is held about 1 foot (30.5 cm) from the bark surface. You may have to turn large logs several times to get complete coverage.

6. Do not spray trees when the bark is wet.

7. Do not spray vacated trees. Spraying such trees serves no useful purpose and, in fact, may kill some of the beetle's natural enemies that are completing their development in these trees. Also, do not spray stumps of infested trees that have been felled.

8. After completing treatments, field crews should check around the spot to see that no infested trees have been overlooked.

9. Check for breakouts[3] during the next aerial survey. Treat breakouts as needed.

Anyone considering chemical treatment should contact a local State forestry office, county extension agent, or the USDA Forest Service's Forest Pest Management office for the latest information on registered insecticides and their use. Always follow label instructions on the insecticide container.

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[3]A breakout occurs when SPB's emerge from a treated spot and attack neighboring trees.

When to Act

Suppression should be a year-round effort. Plan to spray from late spring through fall to control actively spreading infestations. Winter and early spring treatments are also important because they will reduce the potential for spot growth or new spot development later in the spring and summer. Although infestations are concentrated in fewer trees for longer periods during the colder months, the spots are harder to detect from the air.

Other Options

The landowner's management objectives will affect the choice of one or several treatment methods. Recommended methods not discussed in this fact sheet include salvage removal, cut-and-leave, and pile-and-burn. SPB fact sheets 15, 16, and 18 discuss these three methods respectively.

References

Berisford, C.Wayne; Turnbow, Robert H.; Brady, U.Eugene. Selective application of insecticides for prevention of southern pine beetle attack. Journal of Economic Entomology. 75: 458-461. 1982.

This fact sheet is based on Agriculture Handbook No. 575, Direct Control Methods for the Southern Pine Beetle, by Kenneth M. Swain, Sr., USDA Forest Service, and Michael Remion, South Carolina Commission of Forestry (1981).

This is the second edition of Southern Pine Beetle Fact Sheet No. 17. This edition was revised by John W. Taylor, Jr., Forest Pest Management Staff, State and Private Forestry, Southern Region, USDA Forest Service.